VPDES PERMIT FACT SHEET

This document gives pertinent information concerning the **reissuance** of the VPDES permit listed below This permit is being processed as a **Major, Municipal** permit. The effluent limitations contained in this permit will maintain the Water Quality Standards of 9 VAC 25-260-00 et.seq. The discharge results from the operation of a 1.25 MGD WWTP consisting of: Influent pump station, influent doppler flow meter, mechanical bar screen, aerated grit chamber, flow equalization basin, oxidation ditch, dual secondary clarifiers, dual aerobic digesters, sludge drying press, sludge storage facility, ultraviolet light disinfection facilities, postaeration facilities, totalizing, indicating, and recording effluent flow measuring facilities, and control building. Final sludge disposal is by co-disposal in the Carroll-Grayson-Galax Landfill. This permit action consists of limiting pH, $CBOD_5$, suspended solids, ammonia nitrogen, E.coli, and dissolved oxygen; and including special conditions regarding sludge use and disposal, control of significant dischargers, a toxics management program, and other requirements and special conditions. SIC Code: 4952.

1. Facility Name and Address:
Hillsville Wastewater Treatment Plant
P.O. Box 545
410 N. Main Street
Hillsville, VA 24343

Location:
450 Cross Creek Road
Hillsville, VA 24343

2. **Permit No. VA0089443**
(Previous) Effective Date: January 15, 2007
(Previous) Expiration Date: January 14, 2012

3. Owner Contact: Name: Larry South
Title: Town Manager
Telephone No: 276-728-2128

Facility Contact: Name: Darrick Mayes
Title: Utilities Director
Telephone No: 276-728-5533

4. Application Complete Date: April 29, 2011
Permit Drafted By: Fred M. Wyatt Date: April 29, 2011
Southwest Regional Office
Reviewed By: Steve E. Action Date: 6/9/2011
Reviewed By: _____ Date:
Public Comment Period Dates: from _____ to _____

5. Receiving Stream Name: Little Reed Island Creek; River Mile: 9-LRIO-25.12: Basin: New River; Subbasin: None; Section: 2; Class: VI; Special Standards: None (v and NEW-5 are listed in the Water Quality Standards as special standards but are not applicable to this section).
Latitude: 36°47'13"; Longitude: 80°44'52"

7-Day, 10-Year Low Flow (7Q10): 8.8 MGD (June - Dec.)
1-Day, 10-Year Low Flow (1Q10): 7.7 MGD (June - Dec.)
7Q10 High Flow: 12.7 MGD (Jan. - May)
1Q10 High Flow: 9.8 MGD (Jan. - May)
30-Day, 5-Year Low Flow (30Q5): 12.9 MGD
Harmonic Mean Flow (HM): 26.2 MGD

Tidal? No

On 303(d) list? Yes (See Item # 13 below)

6. Operator License Requirements: Class II

7. Reliability Class: III

8. Permit Characterization:
( ) Private ( ) Federal ( ) State (X) POTW ( ) PVOTW
( ) Possible Interstate Effect ( ) Interim Limits in Other Document

9. Attach a schematic of wastewater treatment system, and provide a general description of the activities of the facility.

Discharge Description

OUTFALL NUMBER	DISCHARGE SOURCE (1)	TREATMENT (2)	FLOW (3)
001	Town of Hillsville	See Page 1 above, first paragraph	1.25 MGD

(1) List operations contributing to flow (2) List treatment units
(3) Design flow

10. Sewage Sludge Use or Disposal: The sludge is stabilized in dual aerobic digesters for 40 days. The sludge is then pumped to the belt filter press where it is conditioned using a polymer and dewatered. The sludge is hauled to the Carroll-Grayson-Galax Landfill for final disposal.

11. Discharge Location Description: See attached Hillsville, VA Quadrangle; Number: 052C

12. Material Storage: None reported

13. Ambient Water Quality Information: This segment of Little Reed Island Creek is impaired. The segment is not supporting the recreation use goal. The impairment is listed as Escherichia coli. The sources are livestock (grazing or feeding operations), wildlife other than waterfowl, on-site treatment systems, and unknown sources. A bacteria TMDL is scheduled to be developed by 2020. AWQM station 9-LRI001.62 had a 44% exceedence of the E.coli water quality standard, station 9-LRI1009.11 had a 22% exceedence, station 9-LRI017.64 had a 55% exceedence, station 9-LRI023.48 had a 66% exceedence, and station 9-LRI031.58 had a 37% exceedence of the E.coli water quality standard.

This segment of Little Reed Island Creek is additionally impaired. The segment is not supporting the aquatic life use goal. The impairment is listed as water temperature. The source is unknown. AWQM station 9-LRI001.62 had a 22% exceedence of the temperature water quality standard and station 9-LRI017.64 had a 25% exceedence of the temperature standard. A temperature TMDL is scheduled to be developed by 2020.

14. Antidegradation Review & Comments: Tier I Tier II (X) Tier III

The State Water Control Board's Water Quality Standards includes an antidegradation policy (9 VAC 25-260-30). All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters. The antidegradation review begins with a Tier determination. The receiving stream is Tier II, since the original effluent limitations for the 1.25 MGD facility were based on the requirements for Tier II waters.

15. Site Inspection: Technical Inspection on 10/28/2009 by Wade Carico.

16. Effluent Screening & Limitation Development: On May 20, 2002, the VPDES Permit was modified to substitute total kjeldahl nitrogen (TKN) limitations (tiered for both low flow and high flow periods) with equivalent ammonia nitrogen limitations and to reduce the monitoring frequency from 5 days per week (for TKN) to once per week (for ammonia nitrogen).

Since the receiving stream flows have not significantly changed since the previous issuance, effluent limitations are not being reevaluated in this reissuance.

The permittee has completed the chemical monitoring required in PART D. of the application Form 2A. No water quality violations were detected.

TMP - During the previous permit cycle, the permittee completed and passed five annual chronic TMP tests. The chronic tests were static renewal tests using C. dubia and Pimephales promelas. The chronic C. dubia was a 3-brood survival and reproduction test and the chronic P. promelas test was a 7-day larval survival and growth test. An evaluation of the data indicates that no limit is needed for the next permit cycle. A summary of the TMP monitoring results and WETLIM10.xls spreadsheet are attached.

Disinfection - On January 15, 2003, new bacteria standards in 9 VAC 25-260-170.A became effective, as did the revised disinfection policy of 9 VAC 25-260-170.B. These standards replaced the existing fecal coliform standard and disinfection policy of 9 VAC 25-160-170. E.coli (fresh water) and enterococci (saltwater and transition zone) criteria replaced the existing fecal coliform criteria. Since this facility disinfects with ultraviolet radiation, the previous permit contained fecal coliform limits. These limits were retained in PART I.A. of the previous permit and remained in effect during a demonstration period (beginning 6 months from the permit effective date) during which a minimum of one sample per week (grab sample taken between 10:00 a.m. and 4:00 p.m.) was analyzed for E.coli.

The permittee completed the fecal coliform/E. coli study during 2007. The study indicated that the facility can consistently achieve compliance with the final limits for E.coli specified in PART I.B.1. of the previous permit. The final E.coli effluent limitation became effective on February 1, 2008 and the facility has consistently met the limitation since that date.

Basis for Effluent Limitations: 1.25 MGD Design Flow

PARAMETER	BASIS FOR LIMITS *	DISCHARGE LIMITS**				MONITORING REQUIREMENTS	
		MONTHLY AVERAGE	WEEKLY AVERAGE	MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
Flow	NA	NL	NA	NA	NL	Continuous	Total & Record.
PH	2	NA	NA	6.0 SU	9.0 SU	1/Day	Grab
$CBOD_5$ (June 1 - Dec. 31)	1,5	20 mg/l 95 kg/d	30 mg/l 140 kg/d	NA	NA	3 Days/Wk.	24 Hour Comp.
$CBOD_5$ (Jan. 1 - May 31)	1,5	25 mg/l 120 kg/d	38 mg/l 180 kg/d	NA	NA	3 Days/Wk.	24 Hour Comp.
Total Suspended Solids	1	30 mg/l 140 kg/d	45 mg/l 210 kd/d	NA	NA	3 Days/Wk.	24 Hour Comp.
NH_3-N (June-Dec.)	2,5	4.3 mg/l	4.3 mg/l	NA	NA	1/Wk.	24 Hour Comp.
NH_3-N (Jan.-May)	2,5	9.0 mg/l	9.0 mg/l	NA	NA	1/Wk.	24 Hour Comp.
E.coli (n/100 ml)	2	126***	NA	NA	NA	3 Days/Wk. at 48 Hr. Int. ****	Grab
Dissolved Oxygen	2,5	NA	NA	7.0 mg/l	NA	1/Day	Grab
Chronic Toxicity Units	2	NA	NA	NA	NL TU_C	1/Year	24 Hour Comp.

* 1. Federal Effluent guidelines
2. Water Quality-based Limits:
3. Best Engineering Judgement
4. Best Professional Judgement
5. Other (e.g. wasteload allocation model)

** Express limits in units of concentration (mg/l) and/or mass (kg/d)
*** Geometric Mean
**** Between 10:00 a.m. and 4:00 p.m.

17. Basis for Sludge Use & Disposal Requirements : The VPDES Permit Regulation (9 VAC 25-31-10 et seq.), adopted by the State Water Control Board May 22, 1996, became effective on July 24, 1996. Among other program changes, the newly adopted regulation incorporated technical standards for the use or disposal of sewage sludge.

18. Antibacksliding Statement: Since no effluent limitations are being relaxed in this reissuance, the antibacksliding provisions of the Permit Regulation (9 VAC 25-31-220.1) do not apply.

19. Compliance Schedule: NA

20. Special Conditions:

PART I.B. Compliance Reporting
Rationale: Authorized by VPDES Permit Regulation, 9VAC25-31-190J4 and 220 I. This condition is necessary when pollutants are monitored by the permittee and a maximum level of quantification and/or a specific analytical method is required in order to assess compliance with a permit limit or to compare effluent quality with a numeric criterion. The condition also establishes protocols for calculation of reported values.

PART I.C. Control of Significant Dischargers
Rationale: VPDES Permit Regulation, 9VAC25-31-730 through 900, and 40 CFR part 403 require certain existing and new sources of pollution to meet specified regulations.

PART I.D. Special Condition - Whole Effluent Toxicity Testing
Rationale: VPDES Permit Regulation, 9VAC25-31-210 and 220I, requires monitoring in the permit to provide for and assure compliance with all applicable requirements of the State Water Control Law and the Clean Water Act.

PART I.E. Other requirements and Special Conditions

1. **95% Capacity Reopener**
Rationale: Required by VPDES Permit Regulation, 9VAC25-31-200 B 4 for all POTW and PVOTW permits

2. **Indirect Dischargers**

Rationale: Required by VPDES Permit Regulation, 9VAC25-31-200 B 1 and B 2 for POTWs and PVOTWs that receive waste from someone other than the owner of the treatment works.

3. **CTC, CTO Requirement**

Rationale: Required by the Code of Virginia § 62.1-44.19: Sewage Collection and Treatment Regulations, 9VAC 25-790; VPDES Permit Regulation, 9VAC25-31-190E.

4. **Operation and Maintenence Manual Requirement**

Rationale: Required by the Code of Virginia § 62.1-44.19: Sewage Collection and Treatment Regulations, 9VAC25-790; VPDES Permit Regulation, 9VAC25-31-190E.

5. **Licensed Operator Requirement**

Rationale: The VPDES Permit Regulation, 9VAC25-31-200 C and the Code of Virginia § 54.1-2300 et seq, Rules and Regulations for Waterworks and Wastewater Works Operators (18VAC160-20-10 et seq.), require licensure of operators.

6. **Reliability Class**

Rationale: Required by the Sewage Collection and Treatment Regulations, 9 VAC25-790 for all municipal facilities.

7. **Treatment Works Closure Plan**

Rationale: State Water Control Law § 62.1-44.19. This condition is used to notify the owner of the need for a closure plan where a treatment works is being replaced or is expected to close.

8. **Section 303(d) List (TMDL) Reopener**

Rationale: Section 303(d) of the Clean Water Act requires the total maximum daily loads (TMDLs) be developed for streams listed as impaired. This special condition is to allow the permit to be reopened if necessary to bring it in compliance with any applicable TMDL approved for the receiving stream. The reopener recognizes that, according to Section 402(o)(1)of the Clean Water Act, limits and/or conditions may be either more or less stringent than those contained in the permit. Specifically, they can be relaxed if they are the result of a TMDL, basin plan, or other wasteload allocation prepared under Section 303 of the Act.

9. **Sludge Reopener**

Rationale: Required by VPDES Permit Regulation, 9VAC25-31-220C for all permits issued to treatment works treating domestic sewage.

10. **Sludge Use and Disposal**

Rationale: VPDES Permit Regulation, 9VAC25-31-100 P; 220B.2.; and 420 through 720, and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on sludge use and disposal practices and to meet specified standards for sludge use and disposal.

PART II, Conditions Applicable to All Permits

Rationale: VPDES Permit Regulation, 9VAC25-31-190 requires all VPDES permits to contain or specifically cite the conditions listed.

21. Changes from the previous permit contained in the reissued permit: PART I.B. Special Condition - Bacterial Effluent Limitations and Monitoring Requirements - Additional Instructions, which contains the new disinfection requirements and a schedule of compliance, has been deleted, since the facility is now meeting final E.coli effluent limitations. The Section 303(d) (TMDL) Reopener has been added in PART I E. Other Requirements and Special Conditions.

    Due to numerous system overflows during the previous permit cycle, the WWTP facility does not qualify for reduced monitoring under EPA's Interim Guidance for Performance Based Reductions of NPDES Permit Monitoring Frequencies.

22. Variances/Alternate Limits or Conditions: None

23. Regulation of Users: 9 VAC 25-31-280 B 9 - NA

24. Public Notice Information required by 9 VAC 25-31-280 B:

    HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING: DEQ accepts comments and requests for public hearing by e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all the persons represented by the commenter/requester. A request for a public hearing must also include; 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit and suggested revisions. DEQ may hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit.

    CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION:
    Name: Fred M. Wyatt
    Address: DEQ, Southwest Regional Office, P.O. Box 1688, 355 Deadmore Street, Abingdon, Virginia, 24212- 1688 Phone: (276) 676-4810 E-mail: Frederick.Wyatt@deq.virginia.gov Fax: (276) 676-4899

    Following the comment period, the Board will make a determination regarding the proposed ***reissuance.*** This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given.

25. Additional Comments:

Permit History: VPDES Permit No. VA0089443 for this facility was issued on January 14, 1997, was reissued on January 14, 2002, was modified on May 20, 2002, was reissued on January 15, 2007 and has an expiration date of January 14, 2012.

Threatened or Endangered Species: According to the printout from the Virginia Fish and Wildlife Information Service, no threatened or endangered species have been identified within a two mile radius of the discharge. This facility is not on the list for T&E Coordination by the Department of Game & Inland Fisheries (DFIF) and the Department of Conservation & Recreation (DCR).

Federal Storm Water Regulations: The permittee has complied with the Phase 2 requirements by submitting a VIRGINIA DEQ NO EXPOSURE CERTIFICATION FOR EXCLUSION FROM VPDES STORM WATER PERMITTING.

Permit Fee: A permit fee is not required. Only an annual maintenance fee of $7,317 is required, to be paid by October 1 of each year.

Previous Board Action: None

Staff Comments:

Public Comment:

26. TMDL: See Item #13 above.

PLANNING CONCURRENCE FOR MUNICIPAL VPDES PERMIT

PERMIT NO. VA0089443

FACILITY: Hillsville WWTP

COUNTY: Carroll

[ ] 1. The discharge is in conformance with the existing planning documents for the area.

[ ] 2. The discharge is not addressed in any planning document but will be included, if required, when the plan is updated.

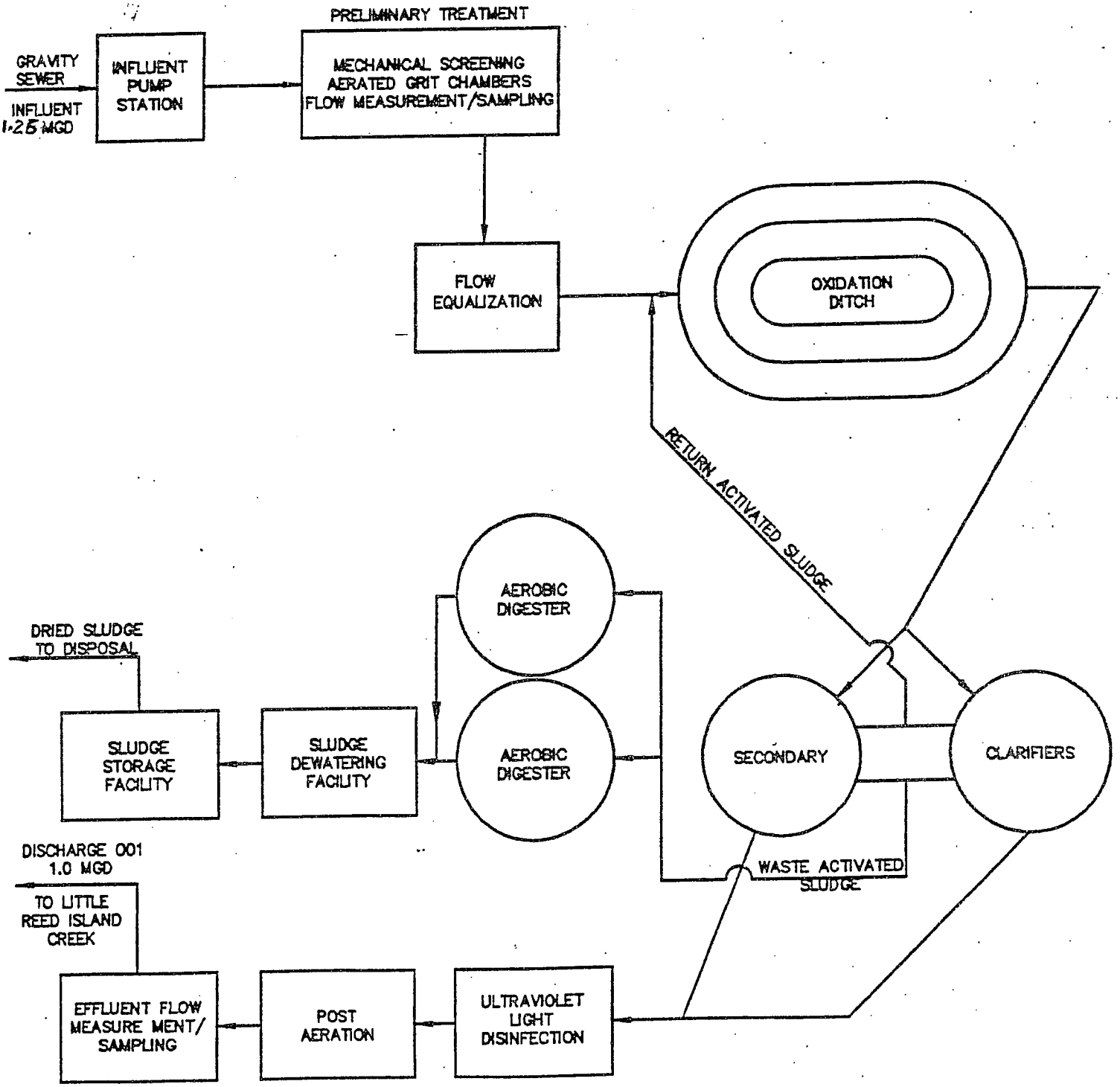
[ ] 3. Other.

_____

Environmental Manager

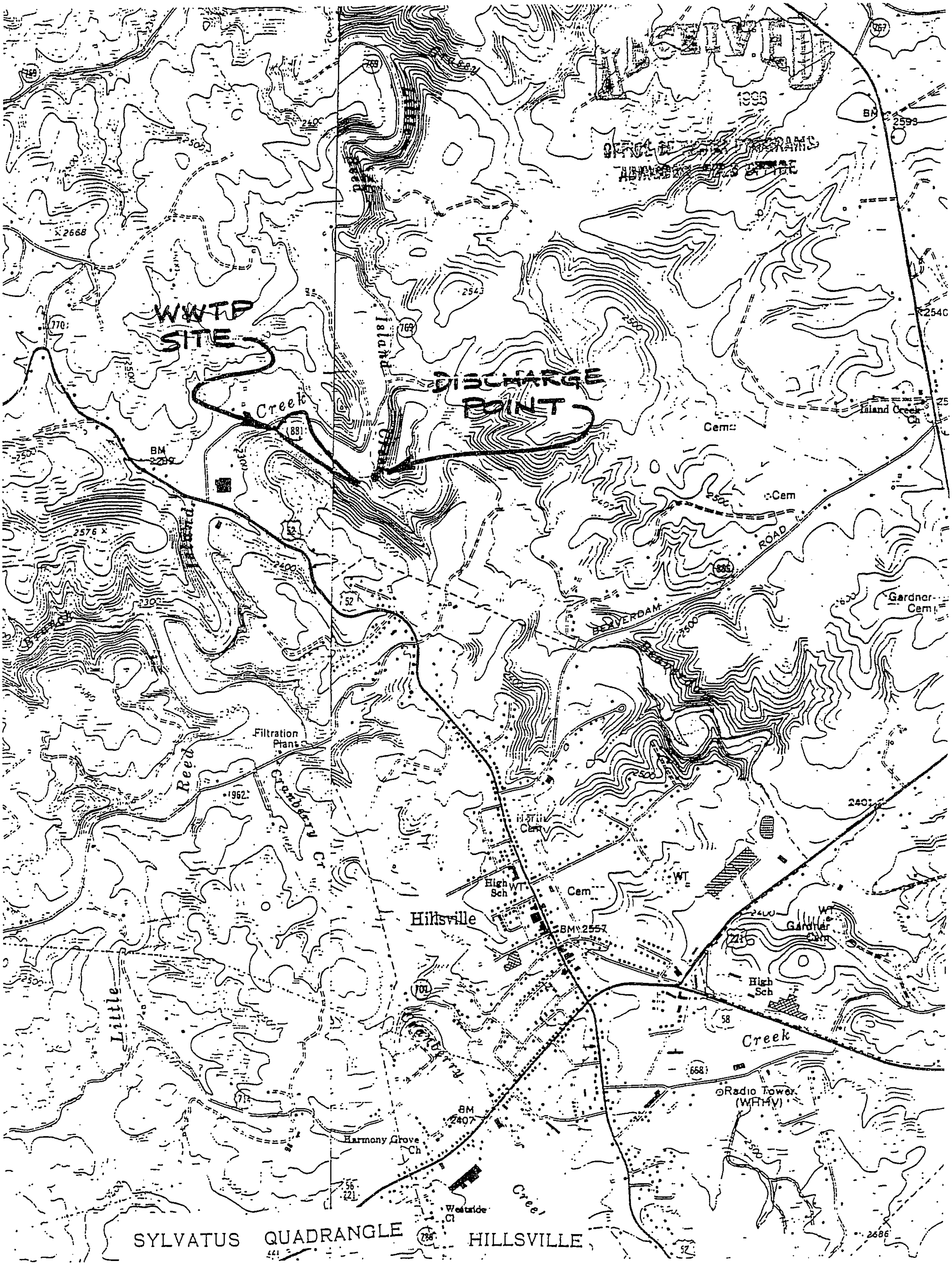
_____

Date



SCHEMATIC OF WASTEWATER FLOW
TOWN OF HILLSVILLE WASTEWATER TREATMENT PLANT
HILLSVILLE, VIRGINIA
DISCHARGE SERIAL NO. 001

DESIGNED BY CSC	SCALE N.T.S.	PREPARED FOR EXHIBIT II TOWN OF HILLSVILLE WWTP	Thompson +Litton Engineers	SHEET
DRAWN BY JAG	DATE			
PROJECT NO.				


RECEIVED
1996
WWTP SITE
DISCHARGE POINT
Creek
Island
Beaverdam
Filtration Plant
Reed
Cranberry Cr
Little
Hillsville
High Sch
Cem
BM 2557
Island Creek Ch
Gardner Cem
Radio Tower (WHHV)
Harmony Grove Ch
Westside Ch
Creek
BEAVERDAM ROAD
SYLVATUS QUADRANGLE
HILLSVILLE

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY
Office of Water Quality Assessments
629 East Main Street P.O. Box 10009 Richmond, Virginia 23219

SUBJECT: Flow Frequency Determination
Hillsville STP - VA#0089443

TO: Fred Wyatt, SWRO

FROM: Paul E. Herman, P.E., WQAP

DATE: August 3, 2001

COPIES: Durwood Willis, Jon VanSoestbergen, File

The Hillsville STP discharges to the Little Reed Island Creek near Hillsville, VA. Stream flow frequencies are required at this site for use by the permit writer in developing effluent limitations for the VPDES permit.

The USGS operated a continuous record gage on the Big Reed Island Creek near Allisonia, VA (#03167500) from 1909 to 1916 and from 1940 to 1995. The gage was located at the Route 693 bridge in Pulaski County, VA. The flow frequencies for the gage and the discharge point are presented below. The values at the discharge point were determined by drainage area proportions and do not address any withdrawals, discharges, or springs lying upstream.

Big Reed Island Creek near Allisonia, VA (#03167500):

Drainage Area = 278 mi^2

1Q10 = 89 cfs — High Flow 1Q10 = 111 cfs
7Q10 = 101 cfs — High Flow 7Q10 = 141 cfs
30Q5 = 143 cfs — HM = 281 cfs
Annual Average = 403 cfs

Little Reed Island Creek at discharge point:

Drainage Area = 41.48 mi^2

1Q10 = 13.3 cfs (8.58 mgd) — High Flow 1Q10 = 16.6 cfs (10.7 mgd)
7Q10 = 15.1 cfs (9.74 mgd) — High Flow 7Q10 = 21.0 cfs (13.6 mgd)
30Q5 = 21.3 cfs (13.8 mgd) — HM = 41.9 cfs (27.1 mgd)
Annual Average = 60.1 cfs (38.9 mgd)

The high flow months are January through May. If you have any questions concerning this analysis, please let me know.

0.9 MGD Water Treatment Plant withdrawal must be subtracted from these flows. Adjusted flows are:

1Q10 = 7.7 MGD
7Q10 = 8.8 MGD
30Q5 = 12.9 MGD

High Flow 1Q10 = 9.8 MGD
High Flow 7Q10 = 12.7 MGD
HM = 26.2 MGD

ATTACHMENT A

Hillsville Regional Sewage Treatment Works Unit Descriptions

A. Main Pump Station (Influent Pump Station)

1. Number of pumps - 2
2. Type of pumps - submersible
3. Capacity - 2200 gpm at 54 feet TDH (each)
4. Control - constant speed drive
5. Flow Measurement
   a. Type - doppler ultrasonic (strapped to pump station force main)
   b. Indicating/totalizing and recording capable at computer monitoring system located in the laboratory

B. Bar Screen

1. Mechanical -

   a. Number - 1
   b. Clear opening - 15 mm
   c. Maximum capacity - 6.25 MGD

2. Manual (By-pass around mechanical screen)

   a. Number - 1
   b. Clear opening - 1.5 inches

C. Aerated Grit Channels

1. Number of channels - 2
2. Mechanically cleaned
3. Basin volume - 3231 gallons (each)
4. Velocity control - aeration
   a. Blower capacity - 110 cfm
   b. Number of blowers - 2

D. Flow Equalization

1. Number of basins - 2
2. Volume - 561,000 gallons in each basin at 15 feet maximum side water depth
3. Type - sideline
4. Type of aeration - submerged aspirator
   a. Number of aspirators - 2 per basin
   b. Oxygen transfer capacity/aspirator - 46.2 lbs./hour using 25 Hp motor
   c. Effluent returned to Flow Equalization Pump Station
   d. Overflow to treatment works by-pass parshall flume prior to entering treatment works discharge line

E. Flow Equalization Pump Station

1. Number of pumps - 2
2. Type of pumps - submersible
3. Capacity - 870 gpm at 47 feet TDH (each)
4. Control - constant speed drive

F. Oxidation Ditch

1. Number of channels - 3
2. Total basin volume - 1,508,611 gallons
3. Hydraulic detention time (at Q = 1.25 MGD) - 28.96 hours
4. Organic loading - 255.54 mg/l or 13.63 lbs./1000 ft^3
5. Type of aeration - surface mounted disc
   a. Number of disc drives and Hp - Four at 30 Hp each and four at 40 Hp each
6. Alkalinity adjustment chemical Feed system
   a. Type of chemical used - magnesium hydroxide
   b. Chemical feed system
      a) Positive displacement diaphragm metering pump
      b) Number of pumps - 2
      c) Capacity of pumps - 20 gph against 85 feet TDH

G. Secondary Clarifiers

1. Number - 2
2. Shape - round (45 feet diameter/clarifier)
3. Volume - 19,880 ft^3 or 148,702 gallons (each clarifier)
4. Weir overflow rate - 4420.97 gpd/ft at Q = 1.25 MGD
5. Surface settling rate - 393 gpd/ft^2 at Q = 1.25 MGD
6. Hydraulic detention time - 5.71 hours at Q = 1.25 MGD
7. Scum collection/treatment - aerobic digester
8. Sludge pumping - Return Activated Sludge
   a. Number of pumps - 2
   b. Type of pump - submersible
   c. Capacity - 870 gpm at 43 feet TDH
   d. Control - variable frequency drive
   e. Flow monitoring
      a) Type - doppler ultrasonic (strap on type)
      b) Indicating/totalizing and recording capable at computer information system located in the laboratory

9. Sludge pumping - Waste Activated Sludge
   a. Number of pumps - 2
   b. Type of pump - submersible
   c. Capacity - 100 gpm at 18 feet TDH
   d. Control - constant speed drive
   e. Flow monitoring
      a) Type - doppler ultrasonic (strap on type)
      b) Indicating/totalizing and recording capable at computer information system located in the laboratory

H. Ultraviolet Disinfection

1. Configuration - open channel
2. Number of channels - 2
3. Number of assemblies per channel - 2
4. Light chamber
   a. Dimensions - 2.5 feet wide by 6 feet long by 0.63 feet maximum side water depth per lamp assembly. Total length of assemblies per channel is 12 feet.
   b. Retention time - 7.49 seconds/unit or 14.98 seconds/channel
   c. Design dosage - 190 microwatts/cm^2 at a distance of 1 meter

5. Lamp/lamp assembly
   a. Number of lamps/module - 6
   b. Number of modules/assemblies - 8 (48 lamps/unit)
   c. Lamp arc length - 147 cm
   d. Lamp spacing - 2.5 inches on centers
   e. Lamps per ballast - 2
   f. Lamp assemblies arranged in series
   g. UV intensity meter/channel - 1
   h. Control box ventilation provided
   i. Lamp monitoring system provided with light emitting diodes on control panel.

6. Method of Routine Maintenance - manual cleaning

I. Non-potable Water System

1. Source - Effluent from ultraviolet disinfection unit
2. Type of pump - Centrifugal
3. Number of pumps - 3
4. Pump Capacity - Two at 55 gpm against 143 feet TDH
   One at 20 gpm against 99 feet TDH
5. Sodium hypochlorite metering pump and solution tank provide to control bacteriological regrowth in piping system.
   a. Metering pump capacity - 12 gpd against 100 psi.

J. Effluent Flow Measurement

1. Flow monitored - effluent from ultraviolet disinfection units
2. Type - parshall flume
3. Indicating/totalizing and recording capable at computer monitoring system located in the laboratory

K. Post Aeration

1. Type - Cascade aeration
2. Number of steps - 7
3. Height of steps - 12-inches

L. Bypass Flow Measurement

1. Flow monitored - overflow from flow equalization basins
2. Type - parshall flume
3. Indicating/totalizing and recording capable at computer monitoring system located in the laboratory

M. Sludge Handling

1. Aerobic Digester
   a. Sludge treated - WAS
   b. Number of digesters - 2
   c. Dimensions - 52 feet by 26 feet by 16.5 feet (each basin)
   d. Volume - 166,863.84 gallons (each basin)
   e. Retention Time - 40 days
   f. Aeration

a) Type of aeration - submerged aspirator
b) Number of aspirators - 2 per digester
c) Oxygen transfer capacity/aspirator - 46.2 lbs./hour using 25 Hp motor

2. Sludge Pumping - digested sludge to belt filter press
   a. Number of pumps - 2
   b. Type of pumps - progressive cavity
   c. Capacity - 34 gpm at 10 feet TDH
   d. Control - variable frequency drive

3. Chemical Conditioning
   a. Type of sludge conditioned - digested sludge
   b. Type of chemical used - polymer
   c. Chemical feed system
      a) Type of feeder - positive displacement diaphragm metering pump
      b) Number of feeders - 1
      c) Maximum feed range - 2 gph

4. Pressure Filtration
   a. Type - belt filter press
   b. Number of units - 1
   c. Size of belt filter - 1.5 meters
   d. Rated capacity - 350 lbs./hour minimum
   e. Discharge cake (% solids) - 18% minimum

N. Laboratory

1. Floor Space - 608.7 ft^2
2. Bench Space - 162 ft^2

O. Alarms

1. Functions monitored by remote terminal units (RTU)
   a. Influent pump station
   b. Mechanical bar screen
   c. Grit channel blowers and pumps
   d. Flow equalization basin pumps and aerators
   e. Secondary clarifier high torque alarm
   f. Return and Waste Activated sludge pumps
   g. Aerobic digester aerators
   h. Influent flow rate
   i. Effluent flow rate
   j. By-pass flow rate
   k. Return and Waste Activated flow rate
   l. Power failure

2. Type of alarm - auto-dialer to 24-hour manned site and to computer located at the laboratory
3. Battery backup power provided at each RTU

****

REGIONAL MODELING SYSTEM VERSION 3.2

****

IDEL SIMULATION FOR THE Hillsville WWTP DISCHARGE DRY SEASON - JUNE-DEC

TO Little Reed Island Creek

IE SIMULATION STARTS AT THE Hillsville WWTP DISCHARGE

********** PROPOSED PERMIT LIMITS **********

LOW = 1.25 MGD cBOD5 = 20 Mg/L TKN = 7 Mg/L D.O. = 7 Mg/L

*** ~~THE MAXIMUM CHLORINE ALLOWABLE IN THE DISCHARGE IS 0.088 Mg/L~~ ***

Alternate Disinfection Reg.

HE SECTION BEING MODELED IS 1 SEGMENT LONG
ESULTS WILL BE GIVEN AT 0.1 MILE INTERVALS

********** BACKGROUND CONDITIONS **********

HE 7Q10 STREAM FLOW AT THE DISCHARGE IS 8.74965 MGD
HE DISSOLVED OXYGEN OF THE STREAM IS 7.551 Mg/L
HE BACKGROUND cBODu OF THE STREAM IS 5 Mg/L
HE BACKGROUND nBOD OF THE STREAM IS 0 Mg/L

********** MODEL PARAMETERS **********

SEG.	LEN. Mi	VEL. F/S	K2 1/D	K1 1/D	KN 1/D	BENTHIC Mg/L	ELEV. Ft	TEMP. °C	DO-SAT Mg/L
1	2.30	0.758	9.652	1.000	0.350	0.000	2218.50	20.00	8.390

The K Rates shown are at 20°C ... the model corrects them for temperature.)

********** RESPONSE FOR SEGMENT 1 **********

TOTAL STREAMFLOW = 9.9997 MGD
(Including Discharge)

DISTANCE FROM HEAD OF SEGMENT (MI.)	TOTAL DISTANCE FROM MODEL BEGINNING (MI.)	DISSOLVED OXYGEN (Mg/L)	cBODu (Mg/L)	nBODu (Mg/L)
0.000	0.000	7.482	10.625	2.165
0.100	0.100	7.462	10.540	2.159
0.200	0.200	7.445	10.455	2.153
0.300	0.300	7.429	10.371	2.147
0.400	0.400	7.415	10.288	2.141
0.500	0.500	7.403	10.205	2.135
0.600	0.600	7.392	10.123	2.129
0.700	0.700	7.383	10.042	2.123
0.800	0.800	7.375	9.962	2.117
0.900	0.900	7.368	9.882	2.111
1.000	1.000	7.363	9.802	2.105
1.100	1.100	7.358	9.723	2.099
1.200	1.200	7.355	9.645	2.093
1.300	1.300	7.352	9.568	2.087
1.400	1.400	7.350	9.491	2.081
1.500	1.500	7.349	9.415	2.075
1.600	1.600	7.349 Sag	9.339	2.070
1.700	1.700	7.349	9.264	2.064
1.800	1.800	7.350	9.190	2.058
1.900	1.900	7.351	9.116	2.052
2.000	2.000	7.353	9.043	2.046
2.100	2.100	7.355	8.970	2.041
2.200	2.200	7.358	8.898	2.035
2.300	2.300	7.361	8.827	2.029

****

EGIONAL MODELING SYSTEM Ver 3.2 (OWRM - 9/90)
4-12-1996 09:48:18

ATA FILE = NEWHILLS.MOD

D.O. Drop = 7.351
7.349
.202 ok

Mass Balance Calculations for Metals

Facility Name: Hillsville WWTP

Assumimg a background value of 0 and Tier II Waters:

Zinc

Acute

$$WQ\text{-}WLA = Ao_d \frac{(Qs\text{-}1_{dry} + Qe)}{Qe}$$

$$WQ\text{-}WLA_{ad} = (0.25)(40.75)(7.7 + 1.25)/1.25 = 73 \text{ mg/l}$$

Chronic

$$AWLA_{cd} = \frac{Co_d(Qs\text{-}7_{dry} + Qe)]}{Qe}$$

$$AWLA_{cd} = (0.25)(40.75)(8.8 + 1.25)/1.25 = 82 \text{ mg/l}$$

Nickel

Acute

$$WQ\text{-}WLA = Ao_d \frac{(Qs\text{-}1_{dry} + Qe)}{Qe}$$

$$WQ\text{-}WLA_{ad} = (0.25)(62.12)(7.7 + 1.25)/1.25 = 111 \text{ mg/l}$$

Chronic

$$AWLA_{cd} = \frac{Co_d(Qs\text{-}7_{dry} + Qe)]}{Qe}$$

$$AWLA_{cd} = (0.25)(6.9)(7.7 + 1.25)/1.25 = 12 \text{ mg/l}$$

From the attached chemical scan, values of 5 ug/l for Nickel and 82 ug/l for Zinc were detected. From the wasteload allocations above, it is obvious that no effluent limitations are needed.

Spreadsheet for determination of WET test endpoints or WET limits

Excel 97
Revision Date: 01/10/05
File: WETLIM10.xls
(MIX.EXE required also)

Enter data in the cells with blue type:

Entry Date:	07/17/06
Facility Name:	
VPDES Number:	VA0089443
Outfall Number:	1
Plant Flow:	1.25 MGD
Acute 1Q10:	7.7 MGD
Chronic 7Q10:	8.8 MGD

Acute Endpoint/Permit Limit — Use as LC_{50} in Special Condition, as TUa on DMR

ACUTE	1.175910046	TUa	LC_{50} =	86	% Use as	1.16	TUa
ACUTE WLAa	2.148		Note: Inform the permittee that if the mean of the data exceeds this TUa:	1.0	a limit may result using WLA.EXE		

Chronic Endpoint/Permit Limit — Use as NOEC in Special Condition, as TUc on DMR

CHRONIC	11.75910046	TU_c	NOEC =	9	% Use as	11.11	TU_c
BOTH*	21.48000053	TU_c	NOEC =	5	% Use as	20.00	TU_c
AML	11.75910046	TU_c	NOEC =	9	% Use as	11.11	TU_c

ACUTE WLAa,c	21.48	Note: Inform the permittee that if the mean
CHRONIC WLAc	8.04	of the data exceeds this TUc: 4.83233967
* Both means acute expressed as chronic		a limit may result using WLA.EXE

% Flow to be used from MIX.EXE

100	%	Acute
100	%	Chronic

Difuser /modeling study?

Enter Y/N	N
Acute	1 :1
Chronic	1 :1

Are data available to calculate CV? (Y/N) N (Minimum of 10 data points, same species, needed) Go to Page 2

Are data available to calculate ACR? (Y/N) N (NOEC<LC50, do not use greater/less than data) Go to Page 3

IWC_a	13.96648045 %	Plant flow/plant flow + 1Q10
IWC_c	12.43781095 %	Plant flow/plant flow + 7Q10

NOTE: If the IWCa is >33%, specify the NOAEC = 100% test/endpoint for use

Dilution, acute	7.16	100/IWCa
Dilution, chronic	8.04	100/IWCc

WLA_a	2.148	Instream criterion (0.3 TUa) X's Dilution, acute
WLA_c	8.04	Instream criterion (1.0 TUc) X's Dilution, chronic
$WLA_{a,c}$	21.48	ACR X's WLA_a - converts acute WLA to chronic units

ACR -acute/chronic ratio	10	LC50/NOEC (Default is 10 - if data are available, use tables Page 3)
CV-Coefficient of variation	0.6	Default of 0.6 - if data are available, use tables Page 2)
Constants eA	0.4109447	Default = 0.41
eB	0.6010373	Default = 0.60
eC	2.4334175	Default = 2.43
eD	2.4334175	Default = 2.43 (1 samp) No. of sample 1

**The Maximum Daily Limit is calculated from the lowest LTA, X's eC. The LTAa,c and MDL using it are driven by the ACR.

$LTA_{a,c}$	8.827092156	WLAa,c X's eA			
LTA_c	4.832339892	WLAc X's eB			
MDL** with $LTA_{a,c}$	21.48000053	TU_c	NOEC = 4.655493	(Protects from acute/chronic toxicity)	
MDL** with LTA_c	11.75910046	TU_c	NOEC = 8.504052	(Protects from chronic toxicity)	
AML with lowest LTA	11.75910046	TU_c	NOEC = 8.504052	Lowest LTA X's eD	

IF ONLY ACUTE ENDPOINT/LIMIT IS NEEDED, CONVERT MDL FROM TU_c to TU_a

MDL with $LTA_{a,c}$	2.148000053	TU_a	LC50 = 46.554934	%	
MDL with LTA_c	1.175910046	TU_a	LC50 = 85.040518	%	

Rounded NOEC's		
NOEC =	5	%
NOEC =	9	%
NOEC =	9	

Rounded LC50's		
LC50 =	47	%
LC50 =	86	

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

2010 Impaired Waters

Categories 4 and 5

New River Basin

Cause Group Code: **N15R-01-BAC** **Little Reed Island Creek**

Location: This segment begins 5 miles above the Hillsville public water intake and extends downstream to the confluence with Big Reed Island Creek.

City / County: Carroll Co. Pulaski Co. Wythe Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli / 5A

AWQM station 9-LRI001.62 had a 44% exceedence of the E.coli water quality standard, station 9-LRI009.11 had a 22% exceedence, station 9-LRI017.64 had a 55% exceedence, station 9-LRI023.48 had a 66% exceedence, and station 9-LRI031.58 had a 37% exceedence of the E.coli water quality standard.

Assessment Unit / Water Name / Description	Cause Category	/ Name	Cycle First Listed	TMDL Schedule	Size
VAS-N15R_LRI01A98 / Little Reed Island Creek / Little Reed Island Creek mainstem from confluence with Big Reed Island Ck upstream to Rock Ck, WQS Section 2.	5A	Escherichia coli	2008	2020	10.61
VAS-N15R_LRI01B98 / East Fork Little Reed Island Creek / From Hillsville PWS intake, upstream five miles, WQS Section 2f.	5A	Escherichia coli	2008	2020	4.92
VAS-N15R_LRI02A08 / Little Reed Island Creek / Segment extends from Rock Creek confluence upstream to Hillsville PWS intake, WQS Section 2.	5A	Escherichia coli	2008	2020	19.34

Little Reed Island Creek	Reservoir (Acres)	River (Miles)
Escherichia coli - Total Impaired Size by Water Type:		34.87

Sources:

- Livestock (Grazing or Feeding Operations)
- On-site Treatment Systems (Septic Systems and Similar Decencentralized Systems)
- Source Unknown
- Unspecified Domestic Waste
- Wildlife Other than Waterfowl

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

2010 Impaired Waters

Categories 4 and 5

New River Basin

Cause Group Code: **N15R-01-TEMP** **Little Reed Island Creek**

Location: This segment begins approximately 1 mile below the Hillsville water intake and continues downstream to the Big Ree(Island Creek confluence.

City / County: Carroll Co. Pulaski Co. Wythe Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Temperature, water / 5A

AWQM station 9-LRI001.62 had a 22% exceedence of the temperature water quality standard and station 9-LRI017.64 had a 25% exceedence of the temperature standard.

Assessment Unit / Water Name / Description	Cause Category	/ Name	Cycle First Listed	TMDL Schedule	Size
VAS-N15R_LRI02A08 / Little Reed Island Creek / Segment extends from Rock Creek confluence upstream to Hillsville PWS intake, WQS Section 2.	5A	Temperature, water	2008	2020	19.34

Little Reed Island Creek	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:		19.34

Sources:

Source Unknown

Virginia Department of Game and Inland Fisheries

4/27/2011 2:32:50 PM **Fish and Wildlife Information Service**

VaFWIS Initial Project Assessment Report Compiled on 4/27/2011, 2:32:50 PM

Help

Known or likely to occur within a **2 mile radius around point 36,47,15.9 -80,44,51.8** in **035 Carroll County, VA**

394 Known or Likely Species ordered by Status Concern for Conservation
(displaying first 23) (23 species with Status* or Tier I** or Tier II**)

BOVA Code	Status*	Tier**	Common Name	Scientific Name	Confirmed	Database(s)
050035	FESE	II	Bat, Virginia big-eared	Corynorhinus townsendii virginianus		HU6
030061	FTSE	I	Turtle, bog (= Muhlenberg)	Clemmys muhlenbergii		Habitat,BOVA,HU6
070118	FSSE	II	Crayfish, Big Sandy	Cambarus veteranus		BOVA
040096	ST	I	Falcon, peregrine	Falco peregrinus		BOVA
040293	ST	I	Shrike, loggerhead	Lanius ludovicianus		BOVA,HU6
100155	FSST	I	Skipper, Appalachian grizzled	Pyrgus wyandot		HU6
040093	FSST	II	Eagle, bald	Haliaeetus leucocephalus		BOVA,HU6
060081	ST	II	Floater, green	Lasmigona subviridis		Habitat,BOVA,HU6
060140	ST	IV	Pistolgrip	Tritogonia verrucosa		HU6

040292	ST		Shrike, migrant loggerhead	Lanius ludovicianus migrans		BOVA
100248	FS	I	Fritillary, regal	Speyeria idalia idalia		BOVA,HU6
020020	CC	II	Hellbender, eastern	Cryptobranchus alleganiensis alleganiensis		BOVA,HU6
030012	CC	IV	Rattlesnake, timber	Crotalus horridus		BOVA,HU6
040225		I	Sapsucker, yellow-bellied	Sphyrapicus varius		BOVA,HU6
040319		I	Warbler, black-throated green	Dendroica virens		BOVA
040306		I	Warbler, golden-winged	Vermivora chrysoptera		BOVA,HU6
020011		II	Frog, mountain chorus	Pseudacris brachyphona		HU6
040052		II	Duck, American black	Anas rubripes		BOVA,HU6
040213		II	Owl, northern saw-whet	Aegolius acadicus		HU6
040320		II	Warbler, cerulean	Dendroica cerulea		BOVA,HU6
040304		II	Warbler, Swainson's	Limnothlypis swainsonii		BOVA,HU6
040266		II	Wren, winter	Troglodytes troglodytes		BOVA
080003		II	Snaketail, pygmy	Ophiogomphus howei		BOVA

To view **All 394 species** View 394

* FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FP=Federal Proposed; FC=Federal Candidate; FS=Federal Species of Concern; SC=State Candidate; CC=Collection Concern; SS=State Special Concern (obsolete January 1, 2011)

** I=VA Wildlife Action Plan - Tier I - Critical Conservation Need; II=VA Wildlife Action Plan - Tier II - Very High Conservation Need; III=VA Wildlife Action Plan - Tier III - High Conservation Need; IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need

Anadromous Fish Use Streams

N/A

Colonial Water Bird Survey

N/A

Threatened and Endangered Waters

N/A

Managed Trout Streams

(1 records) (Click on Stream Name to view complete reach history)

View Map of All Trout Stream Surveys

Reach ID	Stream Name	Class	Brook Trout	Brown Trout	Rainbow Trout	View Map
04TRT-01	Trout Branch	Wild trout	Y			Yes

Bald Eagle Concentration Areas and Roosts

N/A

Habitat Predicted for Aquatic WAP Tier I & II Species

(1 Reach)

View Map Combined Reaches from Below of Habitat Predicted for WAP Tier I & II Aquatic Species

Stream Name	Tier Species						View Map
	Highest TE*	BOVA Code, Status*, Tier**, Common & Scientific Name					
Little Reed Island Creek (50500011)	ST	060081	ST	II	Floater, green	Lasmigona subviridis	Yes

Habitat Predicted for Terrestrial WAP Tier I & II Species

BOVA Code	Status*	Tier**	Common Name	Scientific Name	View Map
030061	FTSE	I	Turtle, bog (= Muhlenberg)	Clemmys muhlenbergii	Yes

Public Holdings:

N/A

Compiled on 4/27/2011, 2:32:51 PM I335930.0 report= IPA searchType= R dist= 3218.688
poi= 36,47,15.9 -80,44,51.8

audit no. 335930 4/27/2011 2:32:51 PM Virginia Fish and Wildlife Information Service

		HARDNESS	153.00
ACUTE	COPPER ug/l	WQSACUTE	20.1
CHRONIC		WQSCHRONIC	12.9
		HARDNESS	153.00
ACUTE	LEAD ug/l		204.33
CHRONIC		WQSCHRONIC	23.21
		HARDNESS	153.00
ACUTE	ZINC ug/l	WQSACUTE	171.79
CHRONIC		WQSCHRONIC	171.79
		HARDNESS	153.00
ACUTE	CADMIUM ug/l	WQSACUTE	6.34
CHRONIC		WQSCHRONIC	1.58
		HARDNESS	153.00
ACUTE	CHROMIUM III ug/l	WQSACUTE	807.15
CHRONIC		WQSCHRONIC	104.99
		HARDNESS	153.00
ACUTE	NICKEL ug/l	WQSACUTE	261.32
CHRONIC		WQSCHRONIC	29.04
		HARDNESS	153.00
ACUTE	SIVER ug/l	WQSACUTE	7.17

TOWN OF HILLSVILLE

P.O. Box 545
410 N. Main St.
Hillsville, Virginia 24343

Website: www2.institute.virginia.edu/services/hillsville/
E-mail:hillsville@tcia.net

Telephone: 540-728-2128
Fax: 540-728-9371

February 11, 2002

Mr. Allen Newman
Department of Environmental Quality
P.0. Box 1688
Abingdon, VA. 24212

Re: Reduced Monitoring of VPDES Permit No. VA0089433, Hillsville Wastewater Treatment Plant

Dear Mr. Newman,

The Town of Hillsville is respectfully requesting modification of the TKN testing requirements on the above referenced permit, from current testing frequency of 5 times per week, to the frequency of 1 time per week. The Town is also requesting that ammonia testing be substituted for TKN testing. The Town feels this is justified for many reasons. First, our TKN test results over the past year have averaged .98 mg/l, with the highest test being 2.1 mg/l. Secondly, we ask that consideration be given to the fact that our plant is an oxidation ditch. These type plants have excellent organic nitrogen and ammonia nitrogen removal characteristics. Also, when considering the previous two points, it is hard to understand the need for a 400% increase in the testing frequency from our previous permit. This increase in testing would cause a very significant increase in our operating costs. At the previous permit testing frequency of 3 per month, it was cost effective to outsource this testing. If we are required to continue testing 5 times per week, we will have no choice but to purchase the equipment and do this testing ourselves. The amount of time it would take to perform these tests would require the Town to hire and train an additional operator. The addition expense for labor and test equipment will increase the Town's operating costs approximately $25,000 per year. Previously the Town has done ammonia testing, and changing from TKN to ammonia testing would eliminate these additional costs. The Town feels these changes would in no way compromise the quality of the effluent of this facility.

In closing, I would like to say that the Town of Hillsville takes it's responsibility of operating our wastewater treatment plant very seriously, and we are very concerned with protecting the water quality of the receiving stream. However, we also have a responsibility to our customers and taxpayers to operate our facility as efficiently as possible. The Town feels that by granting our requested changes, we will be able to fully meet both of these goals.

I would like to thank you for giving this matter your consideration. If you have any questions, please feel free to contact me at 276-728-2128.

Sincerely,

Larry South
Town Manager

Cc: Danny Webb

TMP Annual Test Results
Hillsville WWTP
VA0089443
01/15/2007 - 01/14/2012

TEST DATE		TEST TYPE/ORGANISM	LC_{50} %	NOEC %	% Survival	NOTES	Lab
07/31/07-08/06/07 Received 12/21/07	*AN-1	Chronic *C. dubia*	NA	100% S&R	100	Pass	CBI
07/31/07-08/07/07 Received 12/21/07		Chronic *P. promelas*	NA	100% S 9% G	95	Pass	CBI
08/19/08-08/25/08 Received 12/12/08	AN-2	Chronic *C. dubia*	NA	100% S&R	100	Pass	CBI
08/19/08-08/26/08 Received 12/21/08		Chronic *P. promelas*	NA	100% S&G	88	Pass	CBI
10/27/09-11/2/09 Received 11/18/09	AN-3	Chronic *C. dubia*	NA	100% S&R	100	Pass	CBI
10/27/09-11/3/09 Received 11/18/09		Chronic *P. promelas*	NA	100% S&G	100	Pass	CBI
08/03/10-08/10/10 Received 09/30/10	**AN-4	Chronic *C. dubia*	NA	100% S&R	90	Pass	BMI
08/03/10-08/10/10 Received 09/30/10		Chronic *P. promelas*	NA	100% S&G	97.5	Pass	BMI

% Survival is the percent survival in 100% effluent at the end of the test period.

Test Results for Outfall 001 (all samples are 24 hour flow proportional composites)

ABBREVIATIONS:
AN - Annual test
QT - Quarterly test
CBI - Costal Bioanalysts, Inc.
BMI - Biological Monitoring, Inc.

*Reviewed 01/9/07 - This submittal is considered to be for the 1st annual testing event in the current VPDES Permit, which expires on 01/14/2012. Criteria for the effluent were satisfied, however the laboratory thinks a fish pathogen in the effluent caused irregular survival and biomass in the fat head minnows resulting in a non-monotonic concentration-response curve. The owner should consider using UV irradiation or antibiotics to reduce pathogen interference, through side-by-side testing of treated and untreated

sample, per EPA method (Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms, 4th Edition, October 2002 EPA-821-R-02-013.

**BMI conducted this test. New dilutions were established; 0%, 2.25%, 4.5%, 9%, 54.5% and 100%.

Revised 2/2003

State "Transmittal Checklist" to Assist in Targeting Municipal and Industrial Individual NPDES Draft Permits for Review

Part I. State Draft Permit Submission Checklist

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Facility Name: Hillsville Wastewater Treatment Plant

NPDES Permit Number: VA0089443

Permit Writer Name: Fred M. Wyatt

Date: April 29, 2011

Major [X] **Minor** [ ] **Industrial** [ ] **Municipal** [X]

I.A. Draft Permit Package Submittal Includes:	**Yes**	**No**	**N/A**
1. Permit Application?	X		
2. Complete Draft Permit (for renewal or first time permit– entire permit, including boilerplate information)?	X		
3. Copy of Public Notice?		X	
4. Complete Fact Sheet?	X		
5. A Priority Pollutant Screening to determine parameters of concern?	X		
6. A Reasonable Potential analysis showing calculated WQBELs?	X		
7. Dissolved Oxygen calculations?	X		
8. Whole Effluent Toxicity Test summary and analysis?	X		
9. Permit Rating Sheet for new or modified industrial facilities?			X

I.B. Permit/Facility Characteristics	**Yes**	**No**	**N/A**
1. Is this a new, or currently unpermitted facility?		X	
2. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facilityproperly identified and authorized in the permit?	X		
3. Does the fact sheet **or** permit contain a description of the wastewater treatment process?	X		

I.B. Permit/Facility Characteristics– cont.	Yes	No	N/A
4. Does the review of PCS/DMR data forat least the last 3 years indicate significant non-compliance with the existing permit?		X	
5. Has there been any change in streamflow characteristics since the last permit was developed?		X	
6. Does the permit allow the discharge of new or increasedloadings of any pollutants?		X	
7. Does the fact sheet **or** permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses?	X		
8. Does the facility discharge to a 303(d) listed water?	X		
a. Has a TMDL been developed and approved by EPA for the impaired water?		X	
b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed withinthe life of the permit?		X	
c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water?	X		
9. Have any limits been removed, or are any limits less stringent, than those in the current permit?		X	
10. Does the permit authorize discharges of storm water?		X	
11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production?		X	
12. Are there any production-based, technology-based effluent limits in the permit?		X	
13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?		X	
14. Are any WQBELs based on an interpretation of narrative criteria?		X	
15. Does the permit incorporate any variances orother exceptions to the State's standards or regulations?		X	
16. Does the permit contain a compliance schedule for any limit or condition?		X	
17. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)?	X		
18. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?	X		
19. Is there any indication that there is significant public interest in the permit action proposed for this facility?		X	
20. Have previous permit, application, and fact sheet been examined?	X		

Part II. NPDES Draft Permit Checklist

Region III NPDES Permit Quality Checklist – for POTWs

(To be completed and included in the record only for POTWs)

II.A. Permit Cover Page/Administration	Yes	No	N/A
1. Does the fact sheet or permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?	X		
2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?	X		

II.B. Effluent Limits – General Elements	Yes	No	N/A
1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?	X		
2. Does the fact sheet discuss whether "antibacksliding" provisions were met for any limits that are less stringent than those in the previous NPDES permit?			X

II.C. Technology-Based Effluent Limits (POTWs)	Yes	No	N/A
1. Does the permit contain numeric limits for ALL of the following: BOD (or alternative, e.g., CBOD, COD, TOC), TSS, and pH?	X		
2. Does the permit require at least 85% removal for BOD (or BOD alternative) and TSS (or 65% for equivalent to secondary) consistent with 40 CFR Part 133?	X		
a. If no, does the record indicate that application of WQBELs, or some other means, results in more stringent requirements than 85% removal or that an exception consistent with 40 CFR 133.103 has been approved?			X
3. Are technology-based permit limits expressed in the appropriate units of measure (e.g., concentration, mass, SU)?	X		
4. Are permit limits for BOD and TSS expressed in terms of both long term (e.g., average monthly) and short term (e.g., average weekly) limits?	X		
5. Are any concentration limitations in the permit less stringent than the secondary treatment requirements (30 mg/l BOD5 and TSS for a 30-day average and 45 mg/l BOD5 and TSS for a 7-day average)?		X	
a. If yes, does the record provide a justification (e.g., waste stabilization pond, trickling filter, etc.) for the alternate limitations?			X

II.D. Water Quality-Based Effluent Limits	Yes	No	N/A
1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?	X		
2. Does the fact sheet indicate that any WQBELs were derived from a completed and EPA approved TMDL?		X	

II.D. Water Quality-Based Effluent Limits – cont.	Yes	No	N/A
3. Does the fact sheet provide effluent characteristics for each outfall?	X		
4. Does the fact sheet document that a "reasonable potential" evaluation was performed?	X		
a. If yes, does the fact sheet indicate that the "reasonable potential" evaluation was performed in accordance with the State's approved procedures?	X		
b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?	X		
c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have "reasonable potential"?	X		
d. Does the fact sheet indicate that the "reasonable potential" and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations)?	X		
e. Does the permit contain numeric effluent limits for all pollutants for which "reasonable potential" was determined?	X		
5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?	X		
6. For all final WQBELs, are BOTH long-term AND short-term effluent limits established?	X		
7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?	X		
8. Does the record indicate that an "antidegradation" review was peformed in accordance with the State's approved antidegradation policy?	X		

II.E. Monitoring and Reporting Requirements	Yes	No	N/A
1. Does the permit require at least annual monitoring for all limited parameters and other monitoring as required by State and Federal regulations?	X		
a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?			
2. Does the permit identify the physical location where monitoring is to be performed for each outfall?	X		
3. Does the permit require at least annual influent monitoring for BOD (or BOD alternative) and TSS to assess compliance with applicable percent removal requirements?		X	
4. Does the permit require testing for Whole Effluent Toxicity?	X		

II.F. Special Conditions	Yes	No	N/A
1. Does the permit include appropriate biosolids use/disposal requirements?	X		
2. Does the permit include appropriate storm water program requirements?			X

II.F. Special Conditions – cont.	Yes	No	N/A
3. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?			X
4. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?	X		
5. Does the permit allow/authorize discharge of sanitary sewage from points other than the POTW outfall(s) or CSO outfalls [i.e., Sanitary Sewer Overflows (SSOs) or treatment plant bypasses]?		X	
6. Does the permit authorize discharges from Combined Sewer Overflows (CSOs)?		X	
a. Does the permit require implementation of the "Nine Minimum Controls"?			X
b. Does the permit require development and implementation of a "Long Term Control Plan"?			X
c. Does the permit require monitoring and reporting for CSO events?			X
7. Does the permit include appropriate Pretreatment Program requirements?	X		

II.G. Standard Conditions	Yes	No	N/A
1. Does the **permit** contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?	X		

List of Standard Conditions – 40 CFR 122.41

Duty to comply
Duty to reapply
Need to halt or reduce activity not a defense
Duty to mitigate
Proper O & M
Permit actions

Property rights
Duty to provide information
Inspections and entry
Monitoring and records
Signatory requirement
Bypass
Upset

Reporting Requirements
- Planned change
- Anticipated noncompliance
- Transfers
- Monitoring reports
- Compliance schedules
- 24-Hour reporting
- Other non-compliance

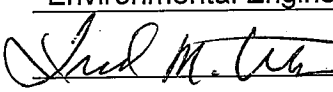
2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for POTWs regarding notification of new introduction of pollutants and new industrial users [40 CFR 122.42(b)]?	X		

Part III. Signature Page

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

Name Fred M. Wyatt

Title Environmental Engineer Sr.

Signature 

Date 04/29/2011